

Notes on the *Laccophilus kobensis* Species-group (Coleoptera, Dytiscidae) in Japan

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Abstract The *Laccophilus kobensis* species-group is revised. As the result, five following species are recognized in Japan: *Laccophilus difficilis* SHARP, *L. kobensis* SHARP, *L. vagelineatus* ZIMMERMANN, *L. nakajimai* sp. nov. and *L. dikinochaseus* sp. nov. Of these, two species are described as new to science.

Introduction

The genus *Laccophilus* is obviously one of the largest and widespread genera of the family Dytiscidae. Consisting of 256 known species, it is distributed mainly in the tropical regions (NILSSON, 2001; TOLEDO, HENDRICH and ŠTASTNÝ, 2002; HÁJEK, 2003). Besides, the Oriental *Laccophilus* was revised by BRANCUCCI (1983), who dealt with 59 species of 10 species-groups, inclusive of many new species which were described and illustrated. Subsequently, new additional species were described by ROCCHI (1986), HENDRICH and BALKE (1995), BALKE and HENDRICH (1997), BALKE, MAZZOLDI and HENDRICH (1998), HENDRICH and BALKE (1998), and TOLEDO, HENDRICH and ŠTASTNÝ (2002). The last-named authors (2002) also suggested that *L. seseanus* shares characters from two different species-groups (the *complicatus* species-group and the *kobensis* species-group). Thus, the following three species clearly belong to the *kobensis* species-group: *L. difficilis*, *L. kobensis* and *L. vagelineatus* from the Oriental and Palearctic regions. In addition, we are going to describe two new species, with a review of the *kobensis* species-group of the genus *Laccophilus* in the present paper.

All the holotypes described in this paper are preserved in the collection of the Entomological Laboratory, Faculty of Agriculture, Ehime University.

We would like to express our gratitude to Mr. Y. KAJI and Mr. J. NAKAJIMA (Kyushu University) for taking the SEM photographs. We also appreciate kind offer of interesting specimens to Messrs. H. FUJIMOTO (Marugame), Y. HASEGAWA (Musashino), K. ISHIDA (Environmental Science Laboratory), N. KINO (Tokorozawa), K. KINOMURA (Gifu), T. KITANO (Tokai University), M. MORI (Kankyo Kagaku Co., Ltd.), J. NAKAJIMA (Kyushu University), Dr. S. NOMURA (National Science Museum), N. SHIMURA (Plant Bio Co., Ltd.), Y. TAHIRA (Shizuoka) and H. TORIKAI (Amami-Ōshima).

Description

Laccophilus difficilis SHARP

[Japanese name: Tsubu-gengorô]

(Fig. 7)

Laccophilus difficilis SHARP, 1873, Trans. ent. Soc. London, **1873**: 53. — ZIMMERMANN, 1930, Koleopt. Rdsch., **16**: 49. — TAKIZAWA, 1932, Ins. matsum., Sapporo, **7**: 22. — KAMIYA, 1938, J. Tokyo Nogyo Daigaku, **5**: 6. — KUROSA, 1949, Trans. Kinki coleopterol. Soc., Osaka, **4**(2): 8. — ZAITZEV, 1953, Fn. SSSR, (58): 102. — NAKANE, 1959, Shin-Konchû, Tokyo, **12**(7/8): 48. — SATÔ, 1961, Akitu, Kyoto, **10**: 8; 1961, Niigata-ken no Konchû, (6): 8. — SATÔ & NARUSE, 1963, Nature Yahagi River, 164. — SATÔ & MIYATAKE, 1964, Rept. Comm. For. Sci. Res. Kyushu Univ., (2): 136. — BRANCUCCI, 1983, Ent. Arb. Mus. Frey, Tutzing, **31/32**: 279. — NILSSON, 1995, Water Beetles of China, **1**: 69. — KITANO, KINO, HASEGAWA & KITAYAMA, 2000, Coleopterists' News, Tokyo, (129): 8. — MORI & KITAYAMA, 2002, Dytiscoidea of Japan, (rev. ed.), 101. — HÁJEK, 2003, Water Beetles of China, **3**: 116.

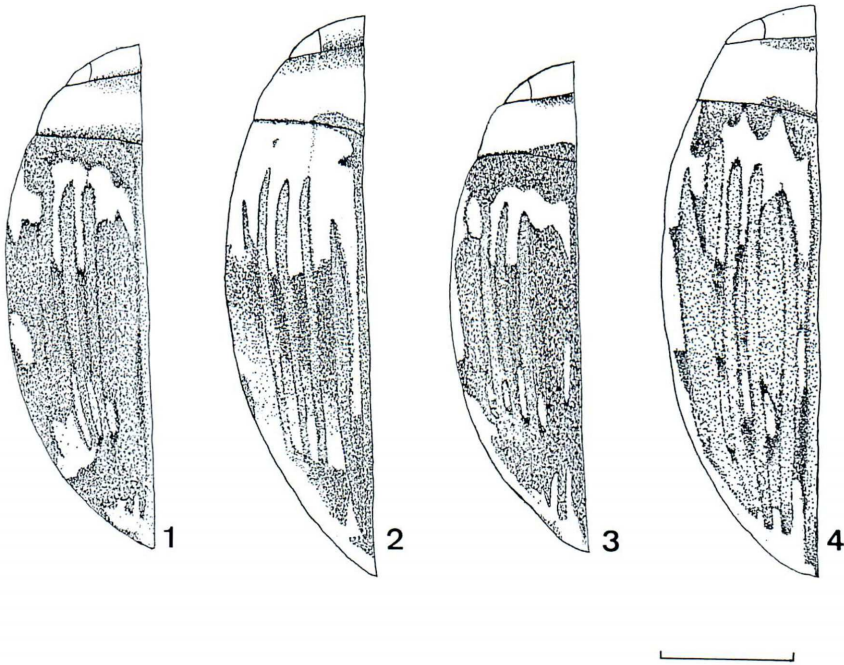
Type locality: Nagasaki, Japan.

Color of dorsal surface almost yellowish brown, but sometimes weakly darkened along the anterior and posterior margins of pronotum; apices of terminal segments of antennae and maxillary and labial palpi somewhat blackish; narrow parts along the posterior margin of prosternal process, metasternal process and abdominal sternites sometimes darkened; hind legs darkened.

Body relatively large, broadly oval, about 1.6 times as long as broad. Head convex; first segment of antenna the longest, second and terminal ones each as long as the first; terminal segment of maxillary and labial palpi the longest. Pronotum convex, about 3.2 times as broad as long. Elytra somewhat convex, about 1.5 times as long as broad, about 1.3 times as broad as pronotum, broadest at the middle; surface sparsely punctate, weakly shining and almost densely microreticulate in the integument; each elytron furnished with some trace of oblique pale markings.

Ventral surface shining; abdominal sternites slightly punctate and pubescent, the apex of last sternite evenly curved. Median lobe of male genitalia weakly curved in lateral aspect, simple in dorsal aspect and the apical third slender (Fig. 7).

Length: 4.0–4.9 mm; breadth: 2.3–2.7 mm.



Figs. 1–4. Habitus of *Laccophilus* species. — 1, *L. kobensis* SHARP; 2, *L. nakajimai* KAMITE, HIKIDA et SATÔ, sp. nov.; 3, *L. vagelineatus* ZIMMERMANN; 4, *L. dikinohaseus* KAMITE, HIKIDA et SATÔ, sp. nov. Scale: 1 mm.

Distribution. Japan (Hokkaido, Honshu, Shikoku, Kyushu, Ryukyus), Far East Russia, China, Korea.

Habitat. Paddy field, pond, lake and so on.

Specimens examined. 211 exs.: Hokkaido (Shari, Kitami, Tomakomai), Iwate Pref. (Ichinoseki, Takizawa), Niigata Pref. (Niigata, Kurokawa), Fukushima Pref. (Inawashiro), Ibaraki Pref. (Tone), Chiba Pref. (Futtsu), Shizuoka Pref. (Hamamatsu), Ishikawa Pref. (Suzu), Fukui Pref. (Miyazaki, Oda), Aichi Pref. (Okazaki, Chiryû, Nagoya, Yatomi), Gifu Pref. (Hashima, Kasamatsu, Motosu, Mino, Seki, Mitake, Mizunami, Ena), Mie Pref. (Ueno, Nabari), Shiga Pref. (Adogawa), Nara Pref. (Gojô), Osaka Pref. (Misaki), Hyôgo Pref. (Mt. Rokkô, Kasai), Shimane Pref. (Ooda, Shimane), Kagawa Pref. (Zentsûji), Ehime Pref. (Matsuyama, Oozu, Misaki, Ipponmatsu), Kôchi Pref. (Tosa, Nakamura), Fukuoka Pref. (Tsuyazaki), Kumamoto Pref. (Seiwa), Kagoshima Pref. (Tane-ga-shima), Ryukyus (Takara-jima, Amami-Ôshima, Okinoerabu-jima, Ishigaki-jima, Iriomote-jima).

Laccophilus kobensis SHARP

[Japanese name: Kôbe-tsubu-gengorô]

(Figs. 1, 8, 12)

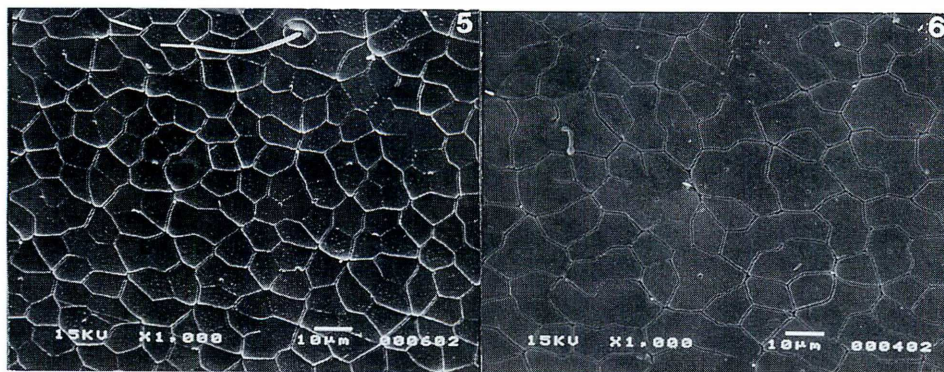
Laccophilus kobensis SHARP, 1873, Trans. ent. Soc. London, **1873** : 53. — ZIMMERMANN, 1930, Koleopt. Rdsch., **16**: 51. — TAKIZAWA, 1932, Ins. matsum., Sapporo, **7**: 23. — KAMIYA, 1938, J. Tokyo Nogyo Daigaku, **5**: 6. — KUROSA, 1949, Trans. Kinki coleopterol. Soc., Osaka, **4**(2): 8. — ZAITZEV, 1953, Fn. SSSR, (58): 105. — NAKANE, 1959, Shin-Konchû, Tokyo, **12**(7/8): 48. — SATÔ, 1961, Akitu, Kyoto, **10**: 8. — 1961, Niigata-ken no Konchû, (6): 8. — SATÔ & NARUSE, 1963, Nature Yahagi River, 164. — BRANCUCCI, 1983, Ent. Arb. Mus. Frey, Tutzing, **31/32**: 277. — NILSSON, 1995, Water Beetles of China, **1**: 69. — MORI & KITAYAMA, 2002, Dytiscoidea of Japan, (rev. ed.), 101. — HÁJEK, 2003, Water Beetles of China, **3**: 117.

Type locality: Kobé (Hiogo), Japan.

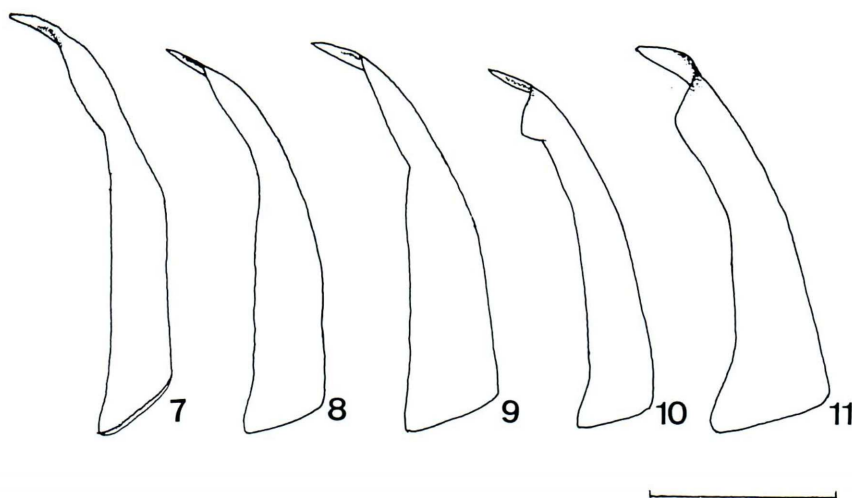
Color of head and pronotum yellowish brown, but darkened along the anterior and posterior margins of pronotum; elytra blackish, but somewhat more darkened and partly yellowish brown; fore and mid legs yellowish brown; hind legs darkened; ventral surface yellowish brown, sometimes darkened along the posterior margin of prosternal process, metasternal process and abdominal sternites.

Body relatively small, oval, about 1.7 times as long as broad. Pronotum convex, about 3.1 times as broad as long. Elytra somewhat convex, about 1.4 times as long as broad, about 1.3 times as broad as pronotum, broadest at the middle; surface sparsely punctate, weakly shining and almost densely microreticulate in integument; each elytron furnished with six dark vittae which are sometimes oblique, 1st vitta the longest and stretching from the base, 2nd from the basal sixth, 3rd to 5th from behind the base, 6th short and oblique, all of them not reaching posterior margin.

Median lobe of male genitalia weakly curved in lateral aspect (Fig. 8); dorsal aspect of apical portion approximately separated into three types as follows: broadly swollen (1), slender but basal 3rd slightly swollen (3), and slender (2) (Fig. 12).



Figs. 5–6. Microreticulation of elytra of *Laccophilus* species. — 5, *L. vagelineatus* ZIMMERMANN; 6, *L. dikinoheuseus* KAMITE, HIKIDA et SATÔ, sp. nov.



Figs. 7–11. Median lobe of male genitalia in lateral aspect of *Laccophilus* species. — 7, *L. difficilis* SHARP; 8, *L. kobensis* SHARP; 9, *L. nakajimai* KAMITE, HIKIDA et SATÔ, sp. nov.; 10, *L. vagelineatus* ZIMMERMANN; 11, *L. dikinohaseus* KAMITE, HIKIDA et SATÔ, sp. nov. Scale: 0.5 mm.

Length: 3.4–3.7 mm; breadth: 2.0–2.4 mm.

Distribution. Japan (Honshu, Shikoku, Kyushu, Ryukyus), China.

Habitat. Pond, paddy field.

Specimens examined. 1 ex., Kamisaka, Nikaho, Akita Pref., 18–V–1996, Y. HASEGAWA leg.; 1 ex., Nagaoka, Kusakata, Akita Pref., 16–IX–2000, Y. HASEGAWA leg.; 2 exs., Yokooka, Kusakata, Akita Pref., 16–IX–2000, Y. HASEGAWA leg.; 2 exs., ditto, N. KINO leg.; 4 exs., Yutori-numa, Miyagi Pref., 18–VIII–1978, M. SATÔ leg.; 4 exs., Kiribuse, Miyagi Pref., 8–IV–1980, T. WATANABE leg.; 6 exs., Sanbata, Yamato, Miyagi Pref., 27–VI–1992, Y. HASEGAWA leg.; 2 exs., ditto, N. KINO leg.; 1 ex., Yuza, Yamagata Pref., 23–X–1993, T. IKEDA leg.; 6 exs., Nakano, Oshima, Niigata Pref., 4–VII–1992, N. KINO leg., 3 exs., Hasunuma, Seiro, Niigata Pref., 30–VI–1990, N. KINO leg.; 1 ex., ditto, Y. HASEGAWA leg.; 1 ex., Byôdôji, Yoshikawa, Niigata Pref., 17–VII–1993, Y. HASEGAWA leg.; 2 exs., Motokiyosumi-yama, Kimitsu, Chiba Pref., 11–XII–1993, N. KINO leg.; 1 ex., ditto, Y. HASEGAWA leg.; 1 ex., Kitazawa Marsh, Mishima, Shizuoka Pref., 7–V–2000, T. KITANO leg.; 7 exs., Nishimura-ashiho, Numazu, Shizuoka Pref., 3–V–2000, Y. TAHIRA leg.; 41 exs., ditto but 5–X–2003, Y. TAHIRA leg.; 1 ex., Tsurugaike, Iwai, Iwata, Shizuoka Pref., 17–VI–2002, Y. TAHIRA leg.; 20 exs., Nabeta, Yatomi, Aichi Pref., 7–V–2004, Y. KAMITE leg.; 1 ex., Donko, Nagoya, Aichi Pref., 24–III–1944, T. HOZUMI leg.; 1 ex., Kasugai, Aichi Pref., 20–V–1956, M. SATÔ leg.; 1 ex., Suzu, Ishikawa Pref., 29–IX–2002, Y. KAMITE leg.; 6 exs., Nishikoyabu, Hashima, Gifu Pref., 16–III–1997, K. KINOMURA leg.; 1 ex., Nakakoyabu, Hashima, Gifu Pref., 28–V–1997, K. KINOMURA leg.; 16 exs., Senbiki, Seki, Gifu Pref., 2–VI–1999, K. KINOMURA leg.; 2 exs., Okugô, Mitake, 30–IX–1999,

K. KINOMURA leg.; 2 exs., Hokke, Ueno, Mie Pref., 19–VIII–2002, Y. KAMITE leg.; 1 ex., ditto but 11–VIII–2001, K. KINOMURA leg.; 2 exs., Anakura, Misato, Mie Pref., 7–VI–1989, Y. HASEGAWA leg.; 11 exs., Kanayama, Nachikatsuura, Wakayama Pref., 27–X–2003, S. TANAKA leg.; 1 ex., Aina, Kôbe, Hyôgo Pref., 30–IV–1997, M. MORI leg.; 5 exs., Aonogahara, Kasai, Hyôgo Pref., 23–VIII–1993, M. MORI leg.; 2 exs., Takuwa, Mitoya, Shimane Pref., 26–V–1998, H. NAKANISHI leg.; 3 exs., Mt. Tsurugi, Tokushima Pref., 11–12–VII–1993, N. OHBAYASHI leg.; 2 exs., Shironohana, Tosa, Kôchi Pref., 14–VII–2002, Y. KAMITE leg.; 3 exs., Shimotobaru, Taihei, Fukuoka Pref., 2–XI–2003, J. NAKAJIMA leg.; 4 exs., Tomie, Gotô, Nagasaki Pref., 20–IV–1976, S. MORITA leg.; 1 ex., Ishigaki-jima, Ryukyus, 15–XII–1987, T. ABE leg.; 3 exs., Nakano, Iriomote-jima, Ryukyus, 20–X–2002, Y. KAMITE leg.; 3 exs., Uebaru, Iriomote-jima, Ryukyus, 8–IV–2000, N. KINO leg.; 2 exs., ditto, Y. HASEGAWA leg.; 2 exs., Shirahama, Iriomote-jima, Ryukyus, 7–VII–2001, N. KINO leg.; 3 exs., ditto, Y. HASEGAWA leg.; 3 exs., ditto but 21–X–2002, Y. KAMITE leg.; 1 ex., Hoshidate, Iriomote-jima, Ryukyus, 8–IV–2000, Y. HASEGAWA leg.; 1 ex., ditto but 21–X–2002, Y. KAMITE leg.; 1 ex., Ôtomi, Iriomote-jima, Ryukyus, 8–IV–2000, Y. HASEGAWA leg.

***Laccophilus nakajimai* KAMITE, HIKIDA et SATÔ, sp. nov.**

[New Japanese name: Nakajima-tsubu-gengorô]

(Figs. 2, 9)

Color almost yellowish brown, but more or less darkened along the anterior and posterior margins of pronotum; central and posterior areas of elytra partly blackish; hind legs reddish; ventral surface reddish, sometimes darkened along the posterior margin of prosternal process, metasternal process and abdominal sternites.

Body relatively large, oval, about 1.9 times as long as broad, Pronotum convex, about 2.8 times as broad as long. Elytra somewhat convex, about 1.5 times as long as broad, about 1.2 times as broad as pronotum, broadest at the middle; surface sparsely punctate, weakly shining and almost densely microreticulate in integument (Fig. 8) and each furnished with six distinct vittae; 1st vitta the longest and extending to the base, 2nd to 6th vittae reaching neither base nor apex, but the 6th is the shortest and oblique.

Median lobe of male genitalia large and its apex slender in lateral aspect (Fig. 9), simple and slender in dorsal aspect.

Length: 3.9–4.6 mm; breadth: 2.1–2.4 mm.

Habitat. Small streams.

Type series. Holotype: ♂, Iranda-rindô, Yonaguni-jima, Ryukyus, Japan, 24–X–2002, Y. KAMITE leg.

Paratypes: 43 exs., same data as for the holotype; 12 exs., ditto but 5–IV–2003, N. KINO leg.; 8 exs., ditto, Y. HASEGAWA leg.; 6 exs., ditto but 5–IX–2001, K. ISHIDA leg.; 8 exs., Higawa, Yonaguni-jima, Ryukyus, Japan, 29–II–2004, J. NAKAJIMA leg.; 3 exs., ditto but 1–V–2003, Y. SHIMURA leg.; 10 exs., Angaimiduchi, Yonaguni-jima, Ryukyus, Japan, 16–III–1993, S. NOMURA leg.

Distribution. Japan (Ryukyus).

This new species is related to *L. kobensis*, but can be distinguished from the latter by the following characteristics: body much larger; basic color of elytra yellowish brown and elytral vittae distinct (Fig. 2); male genitalia larger with the apex slender (Fig. 9). The specific epithet is after Mr. Jun NAKAJIMA who offered interesting specimens.

Laccophilus vagelineatus ZIMMERMANN

[New Japanese name: Kitano-tsubu-gengorô]

(Figs. 3, 5, 10)

Laccophilus vagelineatus ZIMMERMANN, 1922, Not. ent., **2**: 19. — ZIMMERMANN, 1930, Koleopt. Rdsch., **16**: 50. — ZAITZEV, 1953, Fn. SSSR, (58): 104. — BRANCUCCI, 1983, Ent. Arb. Mus. Frey, Tutzing, **31/32**: 282. — NILSSON, 1995, Water Beetles of China, **1**: 69. — HÁJEK, 2003, Water Beetles of China, **3**: 120.

Laccophilus kobensis: KITANO, KINO, HASEGAWA & KITAYAMA, 2000, Coleopterists' News, Tokyo, (129): 8.

Type locality: Ussuri, Spasskaja.

Color of head and pronotum yellowish brown, but darkened along the anterior and posterior margins of pronotum; elytra black, partly yellowish brown; fore and mid legs yellowish brown; hind legs darkened though rarely reddish; ventral surface yellowish brown, sometimes slightly darkened along the posterior margin of prosternal process, metasternal process and abdominal sternites.

Body relatively small, about 1.6 times as long as broad. Pronotum convex, about 3.2 times as broad as long. Elytra somewhat convex, about 1.4 times as long as broad, about 1.3 times as broad as pronotum, broadest at the middle, sparsely punctate, weakly shining and almost densely microreticulate in integument (Fig. 5); each furnished with six oblique vittae, which are sometimes fused at their tips, 1st vitta extending to the base, 2nd to 6th vittae reaching neither base nor apex.

Median lobe of male genitalia stout and triangularly angulate at apical sixth in lateral aspect; the apical portion slender (Fig. 10).

Length: 3.3–3.5 mm; breadth: 2.0–2.3 mm.

Distribution. Japan (Shizuoka Pref.), Russia, China, Korea.

Habitat. Pond, paddy field.

Specimens examined. 3 exs., Matsushima, Hamamatsu, Shizuoka Pref., 8–IX–2001, Y. KAMITE leg.; 18 exs., ditto but 3–VIII–2004, Y. KAMITE leg.; 5 exs., ditto but 5–X–2004, Y. KAMITE leg.; 1 ex., ditto but 20–XI–1999, N. KINO leg.; 3 exs., ditto, Y. HASEGAWA leg.; 3 exs., ditto but 26–VIII–2000, T. KITANO leg.; 4 exs., ditto but 3–IX–2000, Y. TAHIRA leg.; 2 exs., ditto but 20–X–2001, Y. TAHIRA leg.; 3 exs., ditto but 6–V–2002, Y. TAHIRA leg.; 3 exs., ditto but 15–IX–2002, Y. TAHIRA leg.; 1 ex., Shinohara, Hamamatsu, Sizuoka Pref., 22–XII–2002, Y. TAHIRA leg.; 2 exs., Fukude, Sizuoka Pref., 9–VIII–1983, TAHIRA leg.

This species was first recorded by KITANO *et al.* (2000) as *L. kobensis* SHARP,

though it was a misidentification. According to our detailed study, this species is *L. vagelineatus* ZIMMERMANN and is first recorded in this paper for the fauna of Japan.

The new Japanese name is after Mr. Tadashi KITANO who gave us an opportunity to record the species.

***Laccophilus dikinohaseus* KAMITE, HIKIDA et SATÔ, sp. nov.**

[New Japanese name: Watarase-tsubu-gengorô]

(Figs. 4, 6, 11)

Color of head and pronotum yellowish brown, but darkened along the anterior and posterior margins of pronotum; elytra blackish with the lateral margins yellowish brown, but basal areas rarely yellowish brown; fore and mid legs yellowish brown; hind legs sometimes reddish; ventral surface yellowish brown, sometimes tinged with greenish.

Body relatively large, oval, about 2.0 times as long as broad, sparsely punctate, weakly shining. Pronotum convex, about 3.0 times as broad as long. Elytra somewhat convex, about 1.4 times as long as broad, about 1.4 times as broad as pronotum, broadest at the middle, roughly microreticulate in integument (Fig. 6); each furnished with six distinct vittae, 1st vitta the longest and extending to the base, 2nd to 6th vittae reaching neither base nor apex, 6th vitta occasionally oblique.

Median lobe of male genitalia stout and triangularly angulate at the apical sixth in lateral aspect; apical portion somewhat swollen (Fig. 11).

Length: 3.8–4.7 mm; breath: 2.0–2.3 mm.

Habitat. Pond.

Holotype: ♂, Watarase Moor, Fujioka, Tochigi Pref., 8–V–1993, N. KINO leg.

Paratypes: 5 exs., same data as for the holotype; 13 exs., ditto, Y. HASEGAWA leg.; 62 exs., ditto but 13–IX–2003, N. KINO leg.; 7 exs., ditto but 16–X–2004, N. KINO leg.; 1 ex., Tone, Ibaraki Pref., 10–III–1992, S. FURUMAKI leg.; 1 ex., Koyabu, Hashima, Gifu Pref., 1–VI–2000, K. KINOMURA leg.; 3 exs., ditto but 3–VII–2004, Y. KAMITE leg.; 10 exs., ditto but 14–VIII–2004, Y. KAMITE leg.; 4 exs., ditto but 14–VIII–2004, J. NAKAJIMA leg.

Distribution. Japan (Honshu).

This new species is related to *L. vagelineatus*, but can be distinguished from the latter by the following characteristics: body larger; elytra paler in color with yellowish brown lateral margins, vittae distinct and roughly microreticulate in integument; apex of male genitalia somewhat swollen.

The specific name, *dikinohaseus* is formed from a combination of three names, *di*-(two)+*kino*-(Naoto KINO and Kyoichi KINOMURA)+*hase*-(Yoh HASEGAWA)+*us*. They kindly offered us many specimens for this study.

Discussion

According to BRANCUCCI (1983), two types in the median lobe of male genitalia

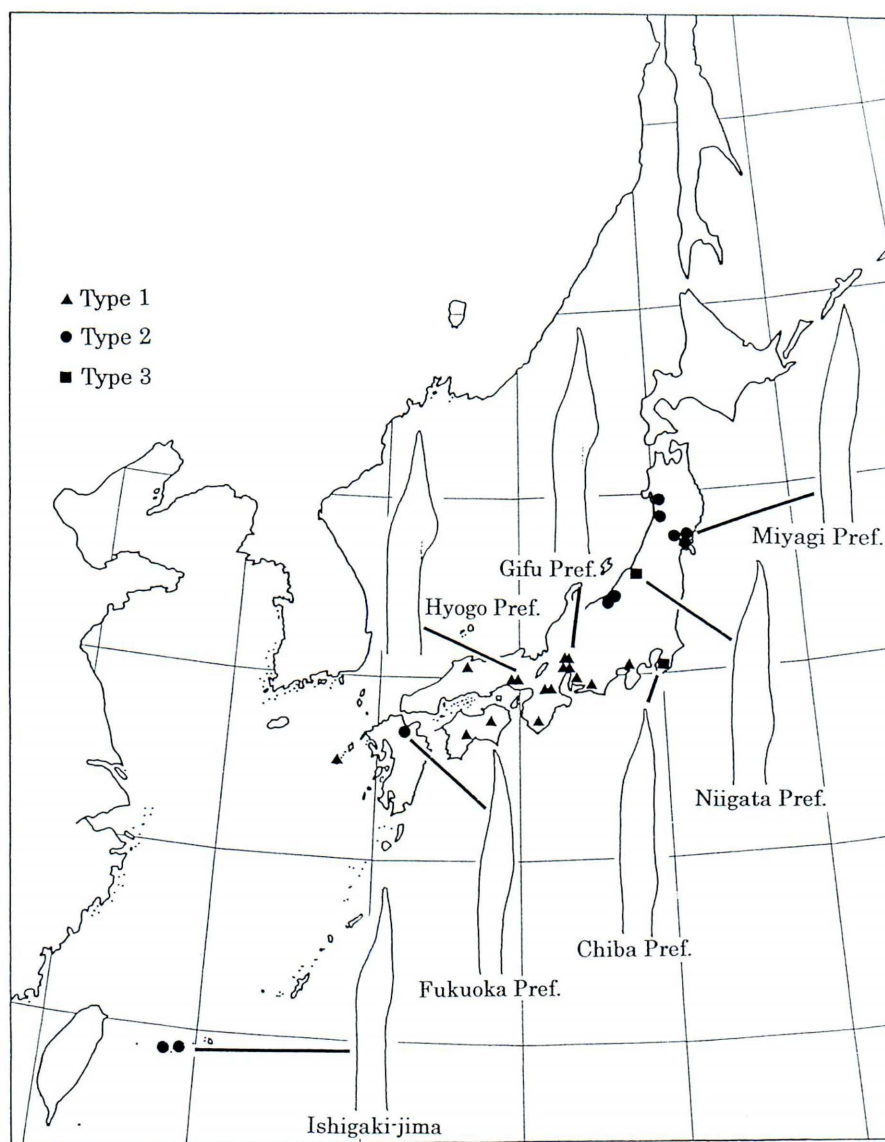


Fig. 12. Map showing geographical variations of *Laccophilus kobensis* in the apical portion of male genitalia in dorsal aspect.

of *L. kobensis* are recognized. As was illustrated in this paper, however, we found three types. The localities of these three types of specimens are plotted on a sketch map (Fig. 12); the type 1 is mainly distributed in the western parts of Honshu, the type 2 in the northern parts of Honshu, Kyushu and the Ryukyus, and the type 3 in Niigata and

Chiba Prefectures, the eastern parts of Honshu. This distributional pattern seems to bear no regularity of biogeographical meaning. In our view, this species may have dispersed by unnatural agency on some accidental occasions, for instance attracted by artificial lights.

Laccophilus nakajimai was collected from streams on Yonaguni-jima Island, while other *Laccophilus* species were found in ponds, swamps or paddy fields. Therefore, this species may have become isolated ecologically from the other species of the same species-group, an interesting example of speciation. It was obtained together with *Platynectes chujoi* SATÔ, *Dineutus mellyi* RÉGIMBART and *Hydraena yonaguniensis* JÄCH in small streams.

Key to the Species of the *Laccophilus kobensis* Species-group in Japan

1. Body broad oval. Elytra furnished with some vague trace of oblique pale markings. Body length: 4.0–4.9 mm. *L. difficilis* SHARP
- Body oval. Elytra furnished with six dark longitudinal vittae. 2
2. Basal areas of elytra somewhat broadly yellowish brown; some vittae distinct. Body length: 3.9–4.6 mm. *L. nakajimai* sp. nov.
- Basal areas of elytra blackish. 3
3. Elytra roughly microreticulate in integument, furnished with distinct vittae. Median lobe of male genitalia distinctly angulate at apical sixth in lateral aspect. Body length: 3.8–4.7 mm. *L. dikinohaseus* sp. nov.
- Elytra densely microreticulate in integument. Median lobe of male genitalia slender at apical portion. Body length: 3.3–3.7 mm. 4
4. Blackish area of elytra relatively pale. Median lobe of male genitalia slender in lateral aspect. *L. kobensis* SHARP
- Blackish area of elytra relatively dark. Median lobe of male genitalia stout and distinctly angulate at apical sixth in lateral aspect. *L. vagelineatus* ZIMMERMANN

要 約

上手雄貴・疋田直之・佐藤正孝：日本産コウベツブゲンゴロウ種群に関する覚え書。—— BRANCUCCI (1983)によると、東洋区から旧北区にかけてコウベツブゲンゴロウ種群のゲンゴロウは3種が分布している。そのうち*Laccophilus difficilis* ツブゲンゴロウおよび*L. kobensis* コウベツブゲンゴロウは、SHARP (1873)によって日本を基準産地として記載され、国内において広く分布が確認されている。手元のこの種群を検討した結果、日本において記録のなかった*L. vagelineatus* ZIMMERMANN キタノツブゲンゴロウ（和名新称）を新たに確認した。そのうえ、既知種に加えて2新種を識別したので*L. nakajimai* ナカジマツブゲンゴロウ（和名新称）と*L. dikinohaseus* ワタラセツブゲンゴロウ（和名新称）をここに記載した。併せて種の検索表を作成して同定の便を図った。

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New Records of *Agraphydrus ishiharai* (Coleoptera, Hydrophilidae) from Honshu, Japan

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Up to the present, *Agraphydrus ishiharai* (MATSUI) has been known from Shikoku and Kyushu, Japan. Recently, I was able to collect this species from Aichi and Shiga Prefectures. In this brief report, I will record it for the first time from Honshu, the main island of Japan.

Agraphydrus ishiharai (MATSUI, 1994)

Enochrus ishiharai MATSUI, 1994, *Trans. Shikoku ent. Soc.*, **20**: 215.

Agraphydrus ishiharai: HANSEN, 1999, *World Catalogue of Insects*, **2**: 156.

Specimens examined. 1 ♂, Togari-chō, Toyota-shi, Aichi Pref., 9–VII–2005; 16 exs., Yasu, Yasu-shi, Shiga Pref., 16–VIII–2003. All collected by Y. KAMITE.

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